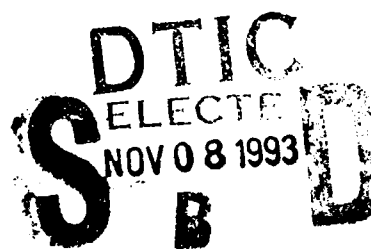AD-A272 028

Joint Specialty Officer Modeling System (JSOMS): Development, Impact, and Uses for the U.S. Navy

Douglas J. Hentzchel

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REPORT DOCUMENTATION PAGE

1. AGENCY USE ONLY (Leave blank)	2. REPORT DATE October 1993	3. REPORT TYPE AND DATE COVERED Final—June 1990-July 1993

4. TITLE AND SUBTITLE
Joint Specialty Officer Modeling System (JSOMS): Development, Impact, and Uses for the U.S. Navy

5. FUNDING NUMBERS
Program Element: 0603707N
Work Unit: 0603707N.R1770.MP041

6. AUTHOR(S)
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7. PERFORMING ORGANIZATION NAME(S) AND ADDRESS(ES)
Navy Personnel Research and Development Center
San Diego, California 92152-7250

8. PERFORMING ORGANIZATION REPORT NUMBER
NPRDC-TR-94-1

9. SPONSORING/MONITORING AGENCY NAME(S) AND ADDRESS(ES)
Chief of Naval Personnel (PERS-45)
Navy Department
Washington, DC 20350-2000

10. SPONSORING/MONITORING AGENCY REPORT NUMBER

11. SUPPLEMENTARY NOTES
Functional Area: Manpower
Product Line: Navy Force Management
Effort: Impact of Joint Specialty Officers (JSOs) Requirements

12a. DISTRIBUTION/AVAILABILITY STATEMENT
Approved for public release; distribution is unlimited.

12b. DISTRIBUTION CODE
A

13. ABSTRACT (Maximum 200 words)

The 1986 Goldwater-Nichol's Reorganization Act was intended to improve the management, development, and deployment of JSOs. Title IV, the management policy portion of the Act, requires all services to identify, train, and assign promotable officers to fill joint duty billets. The report describes a simulation tool that allows the Navy to assess its ability to comply with Title IV and analyze the impact of Title IV policies on Navy Officer Personnel Management. All crucial aspects of Title IV and the Navy career path (as defined by the Navy) have been incorporated into JSOMS. JSOMS has already gained a high level of acceptance and use in the Navy. Several Navy policies have been streamlined to increase the number of officers obtaining joint credit and ultimately being designated as JSO as a result of using the model.

14. SUBJECT TERMS
Simulation, joint specialty officers, manpower planning

15. NUMBER OF PAGES
35

16. PRICE CODE

17. SECURITY CLASSIFICATION OF REPORT UNCLASSIFIED	18. SECURITY CLASSIFICATION OF THIS PAGE UNCLASSIFIED	19. SECURITY CLASSIFICATION OF ABSTRACT UNCLASSIFIED	20. LIMITATION OF ABSTRACT UNLIMITED

Foreword

This report was prepared as part of the Impact of Joint Specialty Officer Requirements project (Program Element 0603707N, Work Unit 0603707N.R1770.MP041), under the sponsorship of the Chief of Naval Personnel (PERS-45). The objective of the project is to help the Navy to assess its ability to comply with Title IV of the 1986 Goldwater-Nichol's Reorganization Act and analyze the impact of Title IV policies on Navy officer personnel management. The work described here was performed during FY90-FY93.

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Summary

Background

The 1986 Goldwater-Nichol's Reorganization Act was intended to improve the management, development, and deployment of joint specialty officers. Title IV, the management policy portion of the Act, requires all services to identify, train, and assign promotable officers to fill joint duty billets. The complexity of Title IV made personnel management, planning, policy analysis, and compliance with the law difficult.

Objective

The report describes a tool that allows the Navy to assess its ability to comply with Title IV and analyze the impact of Title IV policies on Navy officer personnel management.

Approach

Simulation techniques were used to develop the Joint Specialty Officer Modeling System (JSOMS), a management tool capable of analyzing the immediate and long-term impact of joint policy implementation. Using the most recent quarterly personnel and billet information from the Officer Distribution Information System (ODIS) and the Joint Duty Assignment Management Information System (JDAMIS), JSOMS assigns officers to jobs over a multi-year planning horizon, subject to a set of policies specified by the model user. Users can alter Title IV and/or Navy policy parameters to assess the effects of alternative management scenarios.

Results and Conclusions

JSOMS has already gained a high level of acceptance and use in the Navy. Several Navy policies have been streamlined to increase the number of officers obtaining joint credit and ultimately being designated as joint specialty officers as a result of using the model. For example, the Navy has ceased its fight for direct entry waivers (an officer that attends Phase II Joint Professional Military Education (JPME) prior to attending Phase I JPME requires a waiver) to Armed Forces Staff College as a result of seeing model results showing the impact of their use.

JSOMS is a fully operational tool available to assist the Navy in analyzing and understanding the impact of Title IV on the Navy. All crucial aspects of Title IV and the Navy career path (as defined by the Navy) have been incorporated into JSOMS. As with many models, JSOMS will need ongoing maintenance. If the law changes significantly in the future, JSOMS will need to be enhanced to maintain its accuracy. In addition, the Navy may identify other parameters and measures which could be useful in quantifying the impact of policy decisions.

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Introduction

The Goldwater-Nichol's DoD Reorganization Act of 1986 was intended to improve the management, development, and deployment of joint specialty officers (JSOs). Title IV, the management policy portion of the Act, requires all services to identify, train, and assign promotable officers to fill joint duty billets. Appendix A contains a description of Title IV and a joint specialty assignment glossary. The remainder of this report assumes that the reader understands the joint vocabulary and the basic content of Title IV.

Working with the Joint Officer Manning Branch (PERS-455) of the Bureau of Naval Personnel, the Navy Personnel Research and Development Center (NAVPERSRANDCEN) developed a mathematical model to evaluate the Navy's ability to comply with Title IV. The Joint Specialty Officer Modeling System (JSOMS) allows the Navy to assess alternative policies related to Title IV, and enables PERS-455 to develop reasonable plans and policies without unnecessarily disrupting and/or experimenting with the current joint billet assignment process.

This paper presents an overview of JSOMS and then describes: (1) the modeling approach used to develop JSOMS, (2) design considerations, (3) model outputs, and (4) potential uses for JSOMS.

JSOMS Overview

JSOMS simulates the Navy's officer assignment process. Using the most recent quarterly personnel and billet information from the Officer Distribution Information System (ODIS) and the Joint Duty Assignment Management Information System (JDAMIS), JSOMS assigns officers to jobs over a multi-year planning horizon, subject to a set of policies specified by the model user. Figure 1 illustrates the high-level JSOMS architecture.
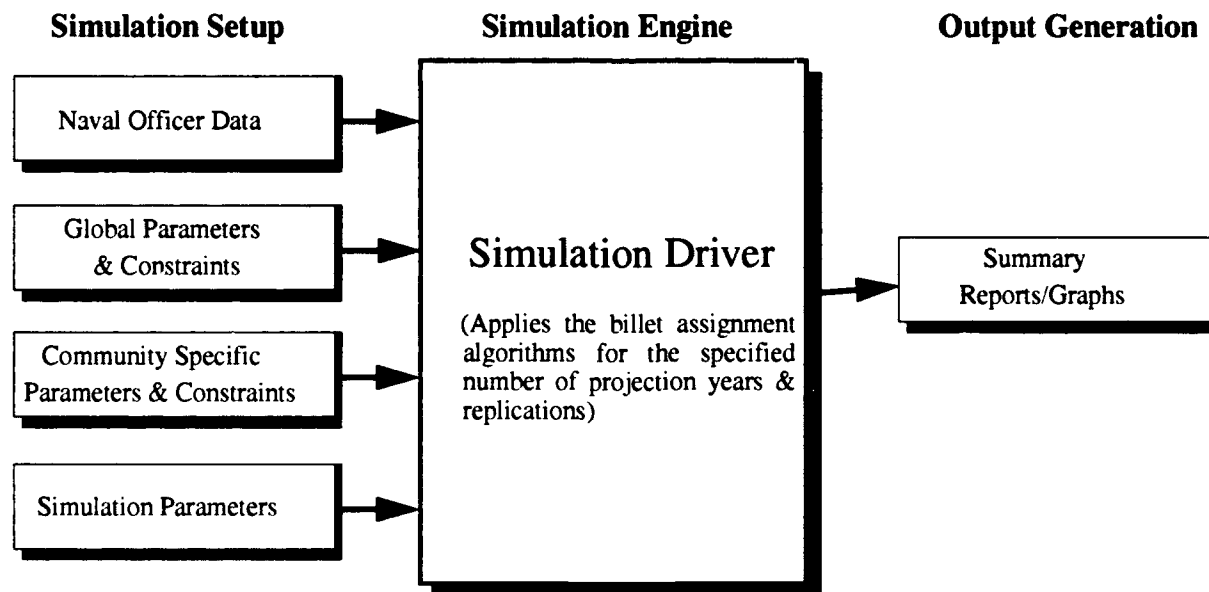
Note. JSOMS = Joint Specialty Officer Modeling System.

Figure 1. JSOMS system architecture.

Prior to executing JSOMS, the user must define a scenario to test. To define a model scenario, the user chooses a community to evaluate (the 17 communities impacted by Title IV are listed in Appendix A), then selects the parameters to be used in the model execution. The parameters which define a scenario have been divided into two categories: (1) those that affect all communities, called "global parameters"; and (2) those that are specific to individual communities, called "community-specific parameters." These parameters are summarized in Table 1.

Table 1

Summary of Parameters

Global Parameters

1. Percent decrease by fiscal year in:
   a. Billets
   b. Community size
2. Percent of JPME graduates assigned immediately to the JDAL
3. School durations
4. Direct entry waivers utilized
5. Percent Phase II seats filled concurrently
6. Minimum JDAL fill percentage by JS3s & JS5s
7. JDAL fill strategies to satisfy (6):
   a. Maximize JS3s, minimize JS5s
   b. Take any available JS3 or JS5
8. Once (7) is satisfied, strategies for filling remaining JDAL billets:
   a. Require nonfail of select, no JDC
   b. Require no JDC only
9. Maximum number of joint tours allowed prior to Flag
10. Percent of nonfail of select JSO eligible persons designated as JSOs

Community-Specific Parameters

1. Percent of officers serving in back-to-back sea tours by paygrade
2. COS takeouts to use by quarter
3. Promotion parameters by paygrade
4. School seat availability by quarter
5. Annual promotions to Flag
6. Annual attrition by paygrade and "quality" status
7. Billet duration distributions by billet type (see Figure 4 for a complete list)
8. JDAL size by fiscal year
9. Number of "command" billets by fiscal year
10. Years of service eligibility range for "command" billets

Note. JPME – Joint Professional Military Education, JDAL – Joint Duty Assignment List, JDC – Joint Duty Credit, JSO – Joint Specialty Officer, COS – Critical Occupation Specialist.

The simulation parameters in the model are the number of years and replications which should be executed. JSOMS allows multiple replications to be simulated so that all quantitative outputs can be evaluated using confidence intervals and statistical tests.
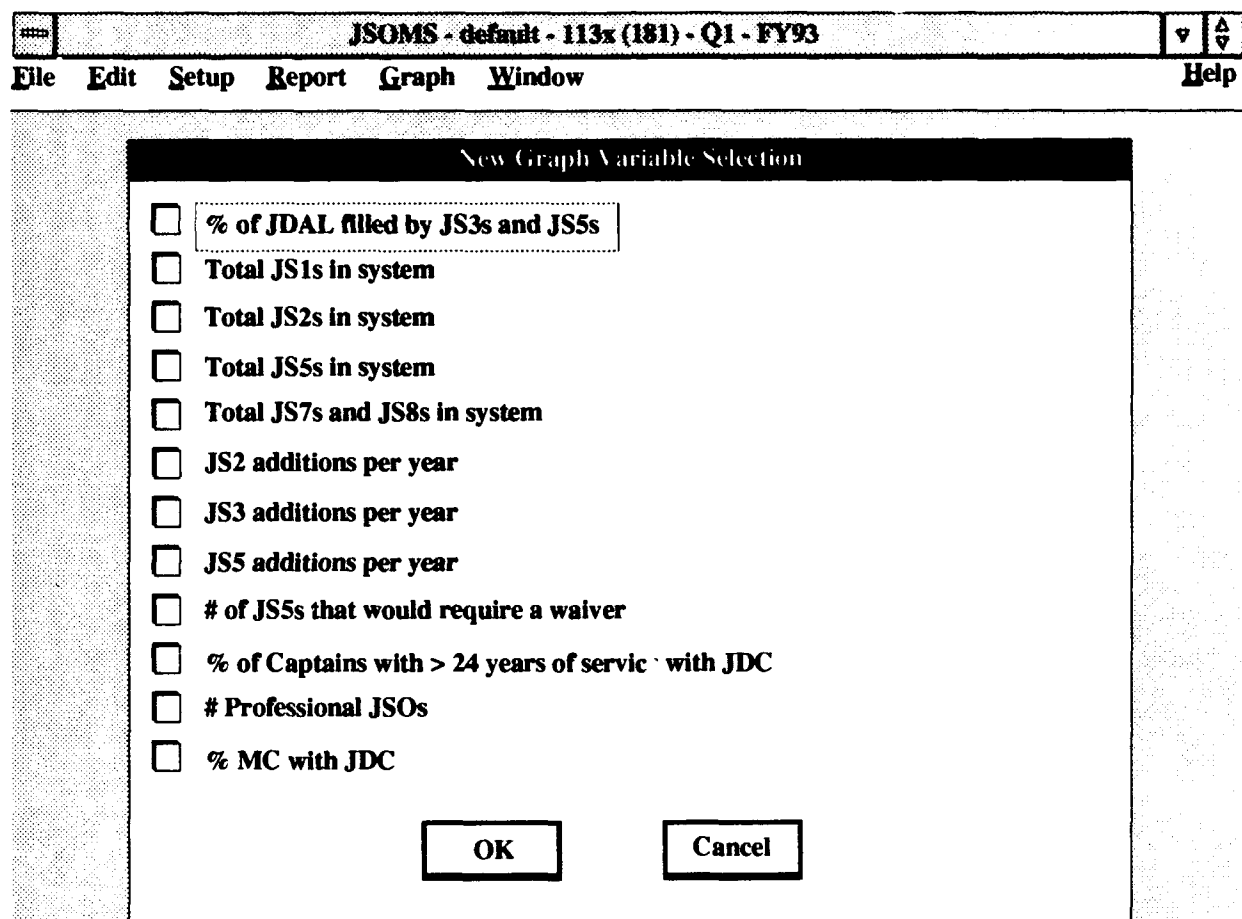
These inputs fuel the simulation engine which operates on a quarterly clock. Ultimately, billets and billet assignments drive the model as the clock moves each officer towards a planned rotation date (PRD). During each quarter, billets become available as the model simulates officer losses, promotions, and rotations. Then, school seats and vacant billets are filled by the best available candidates. A JSO board is simulated at the end of the third quarter of each fiscal year. During the fourth quarter of each simulated fiscal year, statistics are collected for reporting and graphing purposes.

Report files and graphs summarizing the assignments over repeated simulation runs using the same data (replications) can be produced as output. JSOMS tracks many variables for each officer (see listing below). A standard report provides summary data associated with every replication of the simulation run. Appendix B contains a portion of a simulation summary report. Of particular interest to PERS-455 are the number of JSOs designated during each fiscal year, the total number of JSOs in the community by paygrade, the percentage of the JDAL currently filled by JSOs and JSO nominees, the percentage of Captains (O-6s) with more than 24 years of service who have joint duty credit (JDC) by year, and the percentage of Captains that have completed a major command tour and have JDC. Variables tracked for each officer are:

- Designator
- Year group
- Years of service
- Paygrade
- Billet paygrade
- Officer quality information (e.g., promotable, failed selection, due course)
- Time left in billet
- Obligation remaining to the Navy
- Number of joint duty assignments (JDAs) completed
- Number of critical JDAs completed
- Number of sea tours completed at the current grade
- Current billet type (see Figure 4)
- Tour length of current billet assignment
- Critical occupation specialist (COS) Flag
- Year in which a COS takeout occurred
- Year in which a direct entry occurred
- Flag indicating whether officer is JS3 eligible.
- Flag indicating whether officer received "grandfathered" JDC
- Flag indicating whether concurrent Phase II Joint Professional Military Education (JPME) is a current option

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- Flag indicating completion of a command billet
- JS1 and JS1FY—Industrial College of the Armed Forces (ICAF) or National War College (NWC) completion
- JS2 and JS2FY—JDC
- JS3 and JS3FY—JSO Nominee
- JS4 and JS4FY—COS Nominee
- JS5 and JS5FY—Selected as JSO
- JS7 and JS7FY—Phase I JPME completion
- JS8 and JS8FY—Phase II JPME completion

The JSOMS user has the option of viewing any portion of the summary report in a graphical format. The user can choose from three different graphs associated with a single scenario: (1) one-variable confidence interval graphs, (2) one-variable mean value bar graphs or line graphs, and (3) multiple-variable mean value line graphs. The variables which can be graphed are shown in Figure 2. Appendix B contains examples of several graphs generated using JSOMS.

JSOMS - default - 113x (181) - Q1 - FY93

File   Edit   Setup   Report   Graph   Window   Help

New Graph Variable Selection

☐ % of JDAL filled by JS3s and JS5s

☐ Total JS1s in system

☐ Total JS2s in system

☐ Total JS5s in system

☐ Total JS7s and JS8s in system

☐ JS2 additions per year

☐ JS3 additions per year

☐ JS5 additions per year

☐ # of JS5s that would require a waiver

☐ % of Captains with > 24 years of servic · with JDC

☐ # Professional JSOs

☐ % MC with JDC

[OK]   [Cancel]

Note. JSOMS – Joint Specialty Officer Modeling System, JDAL – Joint Duty Assignment List, JSO – Joint Specialty Officer. MC – Major Command, JDC – Joint Duty Credit.

Figure 2. Variables which can be graphed.

Modeling Approach

The primary objective of JSOMS is to simplify analysis of Title IV's interaction with Navy officer community management. Title IV was changed frequently between 1986 and 1990, but has stabilized considerably since. This stability has allowed the Navy to implement consistent policies and provides a solid foundation for modeling.

Three types of approaches to develop JSOMS were considered: array transition modelling, network simulation, and discrete entity simulation. Only the latter approach proved effective.
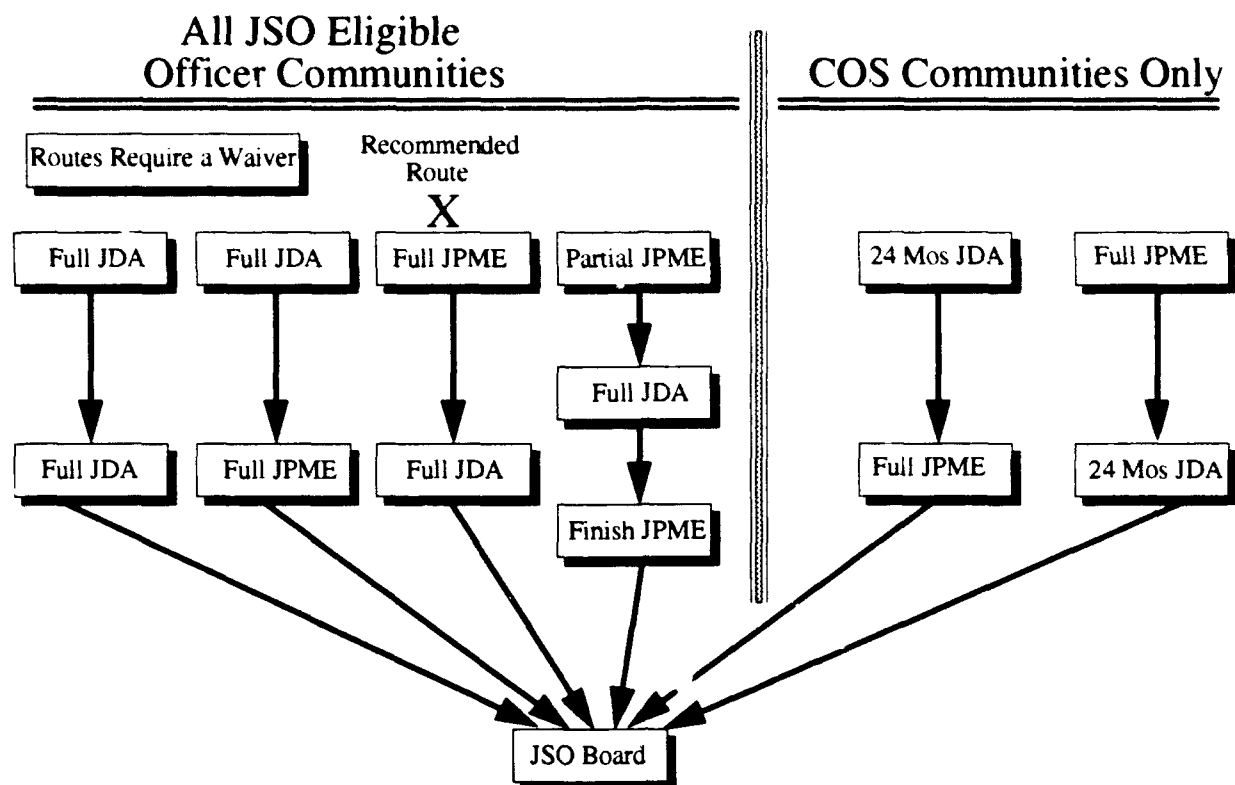
Array transition models forecast the behavior of an aggregate population. Their forecasts are only as reliable as the transition rates that generate the forecasts. However, in the case of JSOs, insufficient historical data exists to formulate accurate transition rates. Moreover, the large number of dimensions (or individual attributes) required to model billet assignments make an array transition implementation unreasonably complex and unstable. The number of combinations of attributes, and thus the number of conditional transition rates, is far too large. For example, an assignment as simple as filling ICAF school seats from all eligible Navy officers must consider the following combination of attributes for each candidate: (1) officer community, (2) paygrade, (3) current billet assignment, (4) officer promotability, (5) previous JPME, and (6) JSO status. The number of possible combinations of these attributes (and thus the number of subpopulations which could conceivably feed into ICAF) is 24 336. Therefore, without even considering the PRD of each officer, 24,336 transition probabilities would be needed to create the next ICAF class. Since the ICAF assignment is trivial compared to assigning Phase II JPME school seats at the Armed Forces Staff College, aggregate modeling becomes unmanageable very quickly.

Network simulations, which have been used effectively to solve some r npower management problems, are very effective in a manufacturing-like environment. Prepackaged simulation programs (SLAM, GPSS, etc.) can be utilized if an "assembly line" type of career path is being simulated. However, the Navy career path, even for an individual community, cannot be defined in such a "closed-loop" form. As a result, JSOMS was unable to take advantage of network simulation software packages.

Instead, JSOMS relied on discrete event entity simulation to consider each officer individually as he/she moves through their Navy career. JSOMS does this by simulating a detailer who looks at the population of officers in need of a billet, sorts the population according to a priority scheme based on individual attributes, and assigns officers to school seats based on their credentials. Unlike the array transition methodology, the detailed nature of entity simulation allows the user to address complex JSO issues.

JSOMS Development and Design

Three issues were critical in designing JSOMS: (1) incorporating the assignments an officer must complete to be eligible for JSO designation, (2) including the community career-path billets which compete for an officer's time, and (3) establishing the priorities considered by the detailers when placing officers in those billets. In early FY91, PERS-455, Navy detailers and NAVPERSRANDCEN discussed these issues. The participants concluded that there are effectively six ways that an officer can become JSO qualified (see Figure 3). These six routes to JSO designation were then expanded to include all possible community-specific billets which compete for an officer's time before, during, and after JDAs and JPME.

All JSO Eligible Officer Communities

COS Communities Only

Routes Require a Waiver

Recommended Route X

Full JDA → Full JDA

Full JDA → Full JPME

Full JPME → Full JDA

Partial JPME → Full JDA → Finish JPME

24 Mos JDA → Full JPME

Full JPME → 24 Mos JDA

JSO Board

Note. JSO - Joint Specialty Officer, COS - Critical Occupation Specialist, JDA - Joint Duty Assignmen. JPME - Joint Professional Military Education, Mos - Months.

Figure 3. Minimum requirements for JSOs.

The intent of Title IV is not to create "professional JSOs" (officers that must abandon a normal career to become a JSO). Instead, the goal is to have quality warfare officers who also have knowledge of and experience with joint operations. Therefore, JSOMS was designed so that operational billets within the officer's primary career path would be given a higher priority than joint billets. After studying the details in the routes to JSO designation, 13 billet types were selected which would represent the competing resources for each officer. Figure 4 depicts these billet types, and their default priority.[1]

The primary goal of Navy force management is to place the right officer in the right job. Each of the thirteen billet types has a specific priority scheme to determine which officers are most qualified for assignment. JSOMS uses the most recent quarterly data from ODIS and JDAMIS as the starting point for the simulation. To preserve anonymity, Social Security Numbers are removed and replaced by an observation number. The PRD is used to determine which officers are available for assignment each quarter.

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[1]Several of the billet types require explanation. "Non-concurrent Phase II" billets are seats at the Armed Forces Staff College filled by officers not currently assigned to a JDAL billet. (The law allows for officers to attend phase II during [or concurrent to] a JDAL tour without adding obligation to the JDAL billet duration.) The "required-fill JDAL" was included to represent the part of Title IV requiring that 50% of the JDAL be filled by JSOs and JSO nominees. These billets have a high priority in the model so that if the Navy can comply with this aspect of the Law, the model will ensure compliance. The "other JDAL" billets represent the remaining 50% of the JDAL billets that do not carry legal implications. The "required-fill shore" billets are shore billets which must be filled by a senior officer that has not failed selection for promotion. The "other shore" billets are used for all remaining officers after the first nine billet types of highest priority have been filled.

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Prioritizing Billet Assignments

Priority

1	Sea Command
2	Shore Command
3	Sea Duty
4	Non-concurrent Phase II
5	Critical JDAL
6	JS3/JS5 JDAL
7	NWC
8	ICAF
9	Senior Phase I
10	Intermediate Phase I
11	Required Fill Shore Duty
12	'Anyone' JDAL
13	Other Shore Duty

OK

Cancel

Help

Note. JSOMS – Joint Specialty Officer Modeling System. JDAL – Joint Duty Assignment List. NWC – National War College. ICAF – Industrial College of the Armed Forces.

Figure 4. Billet types used in JSOMS.

The JSOMS billet assignment process can be viewed from two perspectives: (1) the detailer and (2) the individual officer. From the perspective of the detailer, JSOMS models controlled omniscience. The JSOMS detailer knows exactly how many officers and billets of each type are available each quarter. In addition, the JSOMS detailer follows strict guidelines so that eligibility requirements for each billet type are followed. For example, suppose that JSOMS is making billet assignments during the fourth quarter of FY93 and the time comes to fill seats at NWC (the sea and shore command billets, other sea billets, critical joint billets, and JDAL billets requiring a JSO or JSO nominee have already been filled). The JSOMS detailer would know the school seat quotas available to the community of interest and the number of officers still available for assignment. This subpopulation would then be surveyed for those "technically eligible". In this instance "technically eligible" means that the officer is either an O-5 or O-6 who has not failed to be selected for promotion to the next paygrade. Of those technically eligible, officers who previously attended JPME or are already JSOs are given a lower priority. The JSOMS detailer would then select the quota from the technically eligible subpopulation. If there are more officers than school seats, randomness is introduced so that everyone has an equally likely opportunity to get the schooling. If there are fewer officers eligible than school seats, the seats will remain unfilled. Similar mechanisms are in place for all billet types.

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From the perspective of the officer, JSOMS attempts to fit joint billets and schooling into the career path. For example, an O-4 nuclear submariner must serve an executive officer tour to be eligible for promotion to O-5, a commanding officer tour for promotion to O-6, and a major command tour for promotion to O-7. These key billets fall at specific years during the career. JSOMS attempts to fit joint requirements into the windows between these crucial warfare billets. Joint duty is not made a higher priority than the officer's warfare career. In reality, JSOMS leaves to chance whether an officer fulfills joint requirements at any point during the career.

JSOMS simulates only one community at a time. The billet assignment process is modeled at the community level because: (1) The JDAL and JPME school seats are not fair-shared by community; (2) past compliance with Title IV has varied by community, so the percentage of officers with JDC and JSO designation vary by community; (3) many questions asked of PERS455 concern a specific community, not the entire Navy; (4) the career paths of some communities require back-to-back sea tours at some paygrades, eliminating the possibility of schooling and JDAs during those time periods; (5) promotions to Flag are not fair-shared by community, yet JDC is now a consideration for Flag promotion; and (6) significant differences exist in Title IV for COS and non-COS communities. Because of the uniqueness of each community, changes in policy can have different degrees of impact across the Navy.

Uses for JSOMS

The effectiveness of a joint duty policy is measured by the quantitative results which JSOMS summarizes. In particular, the number of JSOs produced per fiscal year, the percent of the JDAL filled by JSOs and JSO nominees at the end of each fiscal year, and the percent of the Flag eligible officers with JDC are all measures which help evaluate the effectiveness of a policy. These three measures frequently compete against each other, so determining a "best" policy is a subjective exercise. If PERS-455 can clearly define objectives, JSOMS can assist in developing an optimal policy to meet those objectives.

The model can also be used to study the interaction between different aspects of the law. JSOMS allows the Navy to understand the sensitivity associated with each parameter. Bottlenecks can be identified and the joint duty analysts can then focus their attention on critical elements of the law rather than spending time on less significant issues.

Broadly, JSOMS can be used to address two classes of problems: (1) the impact of potential changes to Navy policy implementation and (2) the impact of potential changes to Title IV. Both are important because the Navy must comply with Title IV as it exists today, yet ongoing discussions at Office of the Secretary of Defense and the Joint Staff raise the possibility of changes to Title IV.

The first class of problems results from the flexibility Title IV grants the services in making joint duty and JPME assignments. In addition, the Navy has the freedom to distribute its allotted JPME school seats and COS "takeouts" (A COS officer that leaves his/her first JDAL billet between 24 and 36 months) in any manner it deems appropriate. Because of this freedom, the Navy must establish standards so that Title IV can be met while the burden is shared among all joint-impacted communities. JSOMS can assist the Navy in understanding the impact of changes in its implementation strategies. An example will best illustrate this capability.

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The impact of increased use of COS takeouts can be analyzed by running JSOMS with two separate parameter sets. Typically, a user will want to compare a baseline scenario with a scenario reflecting policy change(s). Title IV allows the Navy to utilize 224 COS takeouts per fiscal year. COS takeouts affect the number of officers receiving JDC, the percentage of the JDAL filled by JSOs and JSO nominees, the number of JSOs produced, the total number of JSOs in the community, and the number of Captains with greater than 24 years of service who have JDC.

An experiment was run using the pilot (131x) community to demonstrate the impact of increased utilization of COS takeouts. In the "BASELINE" scenario, 30 COS takeouts (the number used by the 131x community during FY 1992) was set as an input parameter for each fiscal year from 1993 to 2008. If all 224 COS takeouts were utilized each year by the Navy, the pilot community would use 72, assuming the utilization was "fair-shared" among communities. Thus, in the "Increased COS Takeouts" scenario, 72 COS takeouts were used annually from FY 1993 through FY 2008. Each of the two scenarios were simulated 30 times and mean values were calculated for each summary statistic.

Figure 5 illustrates the impact of an increase in the utilization of COS takeouts. No significant change in the number of JSOs produced was observed when COS takeouts are increased. However, the total number of officers receiving JDC is increased significantly by this change. The number of officers in the O-4 to O-6 population with joint credit increased by 5% by the year 1999 and by roughly 8% by the year 2005.
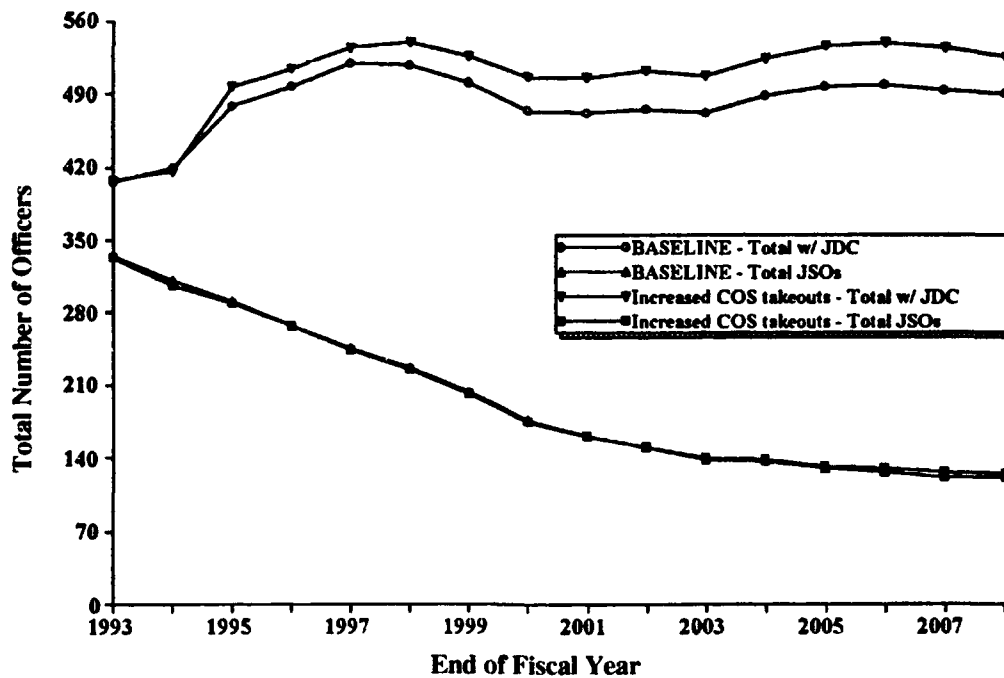
Note. JDC – Joint Duty Credit, COS – Critical Occupation Specialist.

Figure 5. Impact of COS takeouts.

These results are intuitive to those familiar with joint policy implementation, but the quantitative difference between the two scenarios is very difficult to measure apart from JSOMS.

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Such projections allow the Navy to focus on increasing COS takeouts in the COS communities rather than asking for more JDAL billets. One conclusion that can be drawn from this experiment is that the number of officers receiving joint credit is not a bottleneck in the production of JDOs. Since this is true, the question which logically follows is: "How many billets should be on the Joint Duty Assignment List?".

The second class of problems which JSOMS can address is the impact of changes to Title IV. Recently, there has been considerable discussion about changing the size of the JDAL. When first established, the total JDAL size for all services combined was somewhat arbitrary. A round number of 10,000 was selected and the services were then left to find a way to fill these joint jobs subject to the new laws. The Navy's share of the JDAL was roughly 1,800 (1,620 noncritical, 180 critical). The question of appropriateness of the size of the JDAL was not addressed. The hypothesis that the JDAL size is not a bottleneck can be tested by running an experiment using JSOMS to study JSO production under different JDAL sizes. JSOMS allows the JDAL to be changed by fiscal year to any user-specified level.

For example, in the "BASELINE" scenario, the current JDAL size was used for all fiscal years from 1993 to 2008. In the alternative scenario, the number of noncritical JDAL billets was decreased by 25% from the "BASELINE" for all fiscal years. Figure 6 graphs the impact of the decreased JDAL size.
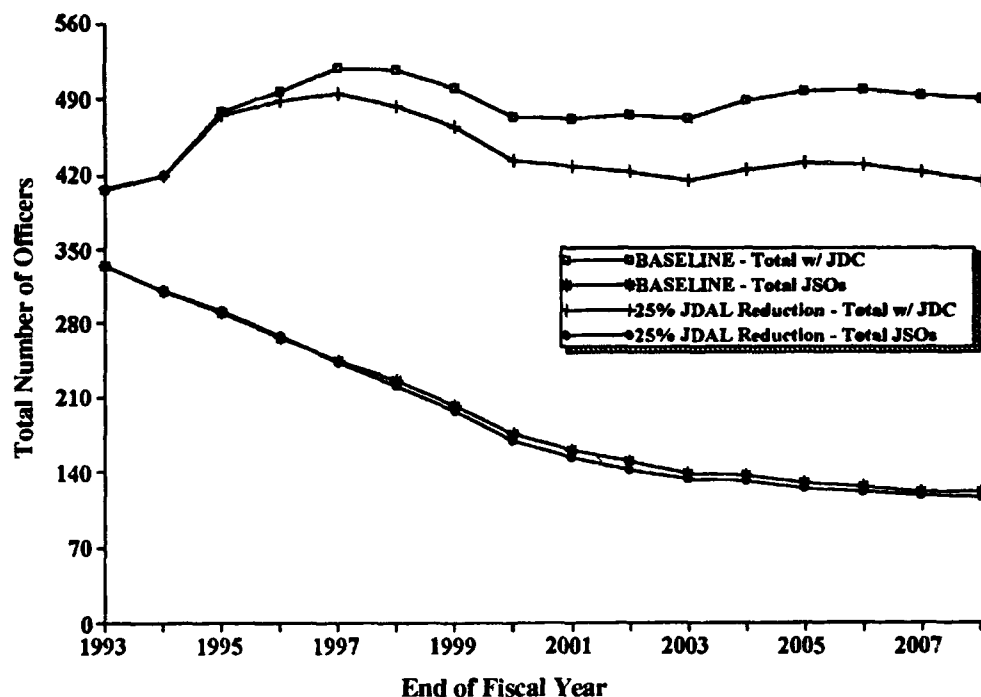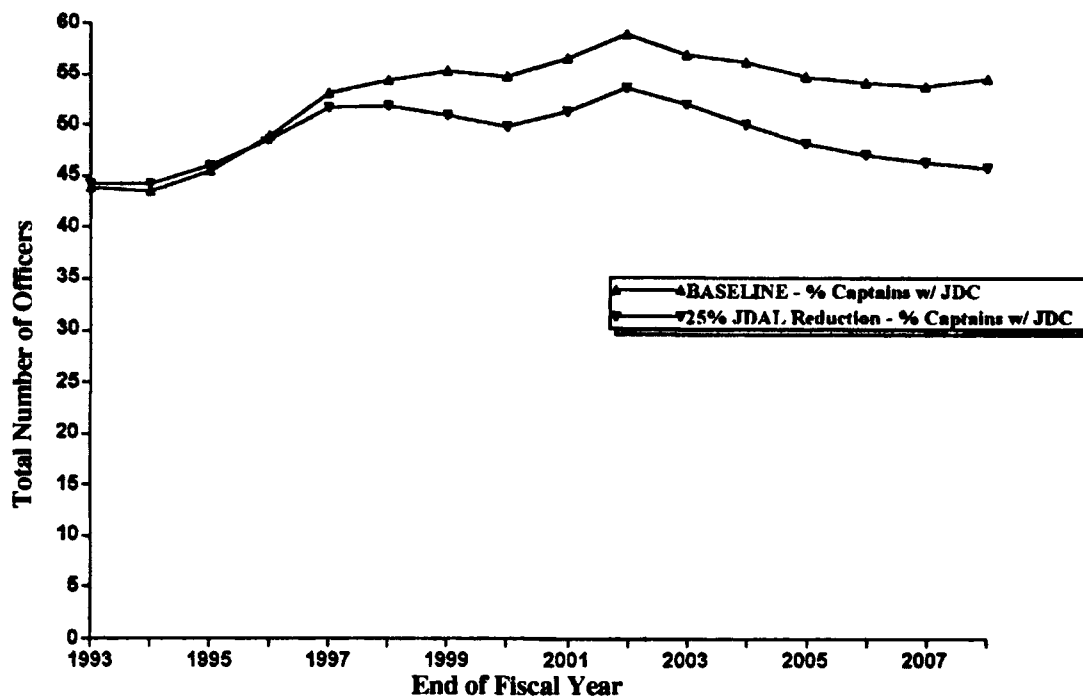

Note. JDAL – Joint Duty Assignment List, JSO – Joint Specialty Officer, JDC – Joint Duty Credit.

Figure 6. Impact of 25% JDAL reduction (JSO & JDC).

Clearly, the number of officers receiving JDC decreases. On the other hand, the total number of JSOs in the population is not significantly changed by the reduction in the size of the JDAL.

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Depending on the objectives of the Congress and the Joint Staff, these types of results may lead to the conclusion that the JDAL can be reduced without changing the intent of the law or hampering the ability of the Navy to fulfill the requirements of the law. The constraining issue is whether enough officers eligible for Flag will have JDC if the JDAL is decreased. While JSOMS cannot answer that question directly, it can estimate the number of promotable captains with JDC (see Figure 7).

Note. JDAL = Joint Duty Assignment List, JDC = Joint Duty Credit.

Figure 7. Impact of 25% JDAL reduction (% Captains with JDC).

Conclusions

JSOMS has already gained a high level of acceptance and use in the Navy. Several Navy policies have been improved as a result of using the model. In particular, the Navy has ceased its fight for "direct entry waivers" to Armed Forces Staff College as a result of seeing model results showing the impact of their use. In addition, the Navy now will not send a JSO to a noncritical JDAL billet, roughly 50% of Phase I JPME graduates go directly to a noncritical JDAL billet, and COS takeouts are being increasingly utilized.

JSOMS is a fully operational tool available to assist the Navy in analyzing and understanding the impact of Title IV on the Navy. All crucial aspects of Title IV and the Navy career path (as defined by the Navy) have been incorporated into JSOMS. As with many models, JSOMS will need ongoing maintenance. If the law changes significantly in the future, JSOMS may have to be enhanced to maintain its accuracy. In addition, the Navy may identify other parameters and measures which could be useful in quantifying the impact of policy decisions.

Appendix A

Key Aspects of Title IV

Excerpts From Title IV

661. Management Policies for Joint Specialty Officers

(a) Establishment

The Secretary of Defense shall establish policies, procedures, and practices for the effective management of officers of the Army, Navy, Air Force, and Marine Corps on the active-duty list who are particularly trained in, and oriented toward, joint matters (as defined in section 668 of this title).

(b) Numbers And Selection

Officers shall be selected for the joint specialty by the Secretary of Defense with the advice of the Chairman of the Joint Chiefs of Staff. The Secretaries of the military departments shall nominate officers for selection for the joint specialty.

(c) Education and Experience

1. An officer who is nominated for the joint specialty may not be selected for the joint specialty until the officer: (A) successfully completes an appropriate program at a joint professional military education school; and (B) after completing such program of education, successfully completes a full tour of duty in a joint duty assignment.

2. An officer (other than a general or Flag officer) who has a military occupational specialty that is a critical occupational specialty involving combat operations (as designated by the Secretary of Defense) and who is nominated for the joint specialty may be selected for the joint specialty after successful completion of a full tour of duty in a joint duty assignment.

The Secretary may not for the purposes of this paragraph designate a military occupational specialty as a critical occupational specialty involving combat operations unless that occupational specialty is within the combat arms.

3. In the case of an officer who has completed both a program of education referred to in paragraph 1 (A) and a full tour of duty in a joint duty assignment, the Secretary of Defense may waive the requirement in paragraph 1 (B) that the tour of duty in a joint duty assignment be performed after the officer completes the program of education if the Secretary determines that the waiver is necessary in the interests of sound personnel management.

d. Number of Joint Duty Assignments

1. The Secretary of Defense shall ensure that approximately one-half of the joint duty assignment positions in grades above captain or, in the case of the Navy, lieutenant are filled at any time by officers who: (A) have the joint specialty; or (B) have been nominated for the joint specialty and—(i) have successfully completed a program of education referred to in subsection (c) 1; or (ii) have a military occupational specialty that is designated under subsection (c) 2 as a critical occupational specialty involving combat operations.

2. The Secretary shall designate not fewer than 1,000 joint duty assignment positions as critical joint duty assignment positions. Such designation shall be made by examining each joint duty assignment position and designation under the preceding sentence those positions for which, considering the duties and responsibilities of the position, it is highly important that the occupant be particularly trained in, and oriented toward, joint matters.

662. Promotion Policy Objectives for Joint Officers

a. Qualifications

The Secretary of Defense shall ensure that the qualifications of officers assigned to joint duty assignments are such that:

1. Officers who are serving on, or have served on, the Joint Staff are expected, as a group, to be promoted to the next higher grade at a rate not less than the rate for officers of the same armed force in the same grade and competitive category who are serving on, or have served on the headquarters staff of their armed force;

2. Officers who have the joint specialty are expected, as a group, to be promoted at a rate not less than the rate for officers of the same armed force in the same grade and competitive category who are serving on, or have served on, the headquarters staff of their armed force; and

3. Officers who are serving in, or have served in, joint duty assignments (other than officers covered in paragraphs 1 and 2 are expected, as a group, to be promoted to the next higher grade at a rate not less than the rate for all officers of the same armed force in the same grade and competitive category.

b. Report

The Secretary of Defense shall periodically (and not less often than every 6 months) report to Congress on the promotion rates of officers who are serving in, or have served in, joint duty assignments, especially with respect to the record of officer selection boards in meeting the objectives of clauses (1), (2), and (3) of subsection (a). If such promotion rates fail to meet such objectives, the Secretary shall immediately notify Congress of such failure and of what action the Secretary has taken or plans to take to prevent further failures.

Title IV Terminology

COS: Critical Occupation Specialist. Any officer with one of the following designators: 111x, 112x, 113x, 114x, 131x, 132x.

COS JSO Nominee: A COS Nominee is a COS officer without JPME who is serving in a JDAL billet.

COS Takeout: A COS officer that leaves his/her first JDAL billet early (before 36 months) with a minimum of 24 months time in billet. The officer should go to an operational tour if counted as a COS takeout. In FY92 the Navy was allowed 224 such officers which is 12.5% of the size of the JDAL.

Critical JDAL Billets: JDAL billets that must be filled by a JSO. Currently, approximately 10% of the billets are designated as critical billets. The on-board grades of these billets.

Direct Entry: An officer that attends Phase II JPME prior to attending Phase I JPME.

Direct Entry Waiver: For an officer to be approved as a "direct entry," a waiver must be approved.

FOS: Fail of Selection. An officer passed over for promotion to the next paygrade with years of service such that they will not be considered again for promotion.

Non-FOS: An officer that can still be considered for promotion to the next paygrade.

Full JPME Credit: JS1 credit or both JS7 and JS8 credit.

JDAL: Joint Duty Assignment List. The armed services JDAL contains approximately 10,000 billets. Of these, the Navy currently has access to approximately 1800 billets.

JDC: Joint Duty Credit. Credit given for the completion of a joint duty assignment list billet.

JPME: Joint Professional Military Education. Full JPME credit is one of the requirements for a person to become a JSO. Full JPME credit can be obtained in two ways: (1) completing National War College or ICAF, or (2) completing both Phase I and Phase II JPME in succession.

JSO: Joint Specialty Officer. This is an officer with joint duty credit that has been selected by the JSO board.

JPME JSO Nominee: An officer that has full JPME credit and is serving in or has completed a JDAL billet.

JS1 (JS1FY): Full JPME credit received for graduation from National War College and ICAF (and the year credit is received).

JS2 (JS2FY): Joint duty credit (and the year credit is received)—see JDC.

JS3 (JS3FY): see JSO nominee.

JS5 (JS5FY): Joint Specialty Officer. An officer that has completed full JPME and a joint duty assignment list billet and has been approved and designated as such by the JSO board.

JS7 (JS7FY): Phase I JPME graduate. Currently, there are several intermediate (O-4) and senior (O-5 & O-6) schools which merit Phase I JPME credit upon graduation.

JS8 (JS8FY): Phase II JPME graduate. Currently Armed Forces Staff College is the only school available which merits Phase II JPME credit upon graduation. This is one of the major bottlenecks to JSO production. JS7 credit is a prerequisite to attending Phase II schooling.

MC: Major Command. For the purposes of JSOMS, a Major Command is an O-6 billet which, if successfully completed, makes an officer Flag eligible. Not all communities have Major Command billets in this sense because (1) Not all communities have officers that make Flag, and (2) not all communities have a command litmus test for Flag eligibility.

Professional JSO: Any JSO that has served in a critical JDAL billet or more than one noncritical JDAL billets. A professional JSO would have 6 or more years invested in joint service and/or training by this definition.

Summary of the Quantitative Aspects of Title IV

1. Fifty percent of the JDAL must be filled by JSO Nominees, COS Nominees, and JSOs.

2. Fifty percent of the ICAF, National War College, and Armed Forces Staff College must go immediately to a JDAL billet.

3. The Navy is allowed to use a maximum of 12.5% of the JDAL size as COS takeouts per year.

4. All JSOs that graduate from ICAF, National War College, and Armed Forces Staff College must go immediately to a JDAL billet.

5. Promotion parity must occur (i.e., the Navy must promote JSOs as a group rate equal to or higher than their counterparts at service headquarters [the OPNAV Staff])

6. The average tour length for non-Flag JDAL billets must be greater than or equal to 3 years (excluding the 224 COS takeouts).

JSOMS - default - 113x (3738) - Q2 - FY93

File   Edit   Setup   Report   Graph   Window   Help

Officer Communities

◉ 1100 = > URL Generalist   ○ 15xx = > Duty Officer Types

○ 111x = > Surface Warfare   ○ 161x = > Cryptology

○ 112x = > Submarine Warfare   ○ 163x = > Intelligence

○ 113x = > Special Warfare   ○ 165x = > Public Affairs

○ 114x = > Special Operations   ○ 18xx = > Oceanography

○ 12xx = > Material Professionals   ○ 31xx = > Supply Corps

○ 131x = > Pilots (Jet, Prop. Helo)   ○ 51xx = > Civil Engineering Corps

○ 132x = > NFO (Jet, Prop)   ○ LDO = > Limited Duty Officer

○ 14xx = > Engineering Duty Officer

[OK]   [Cancel]   [Help]

Note. JSOMS – Joint Specialty Officer Modeling System, URL – Unrestricted Line Officer, NFO – Naval Flight Officer.

Figure A-1. Officer communities impacted by Title IV.

Appendix B

Sample Graphs

Sample Graphs

Subset of the Types of Graphs Available to Assist in Analysis

1. Single variable, confidence interval graph
2. Single variable, single scenario, one variable graph
3. Single variable, multiple scenario graph
4. Multiple variable, single scenario graph
5. Multiple variable, multiple scenario graph
6. Multiple community, multiple variable graph

Excerpts From an End-of-Senario Report
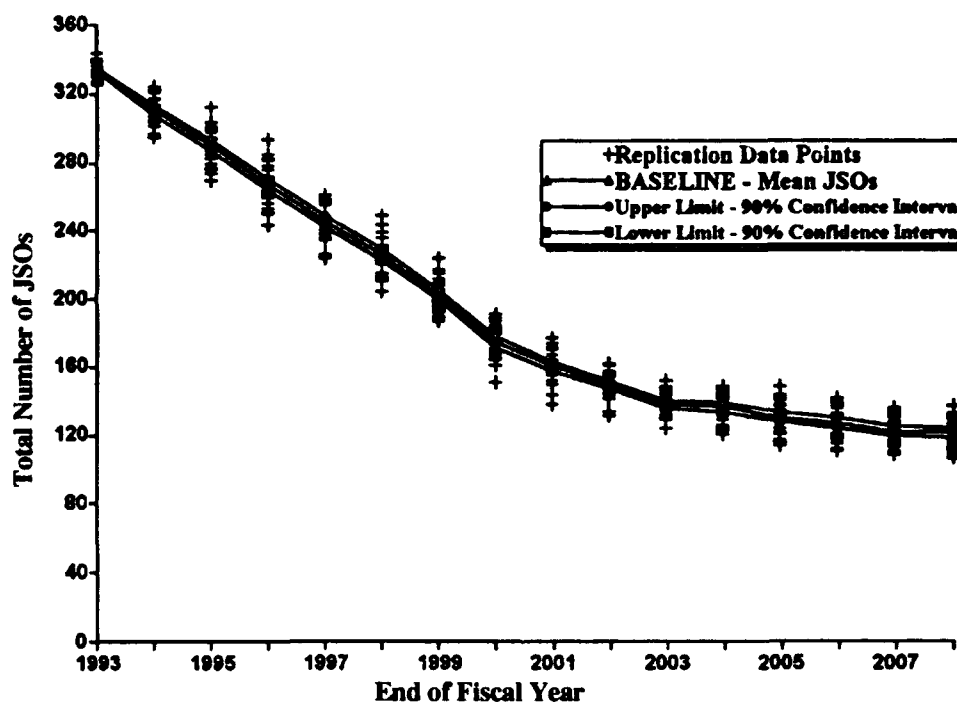
Note. JSOs - Joint Specialty Officers.

Figure B-1. Single variable, confidence interval graph.
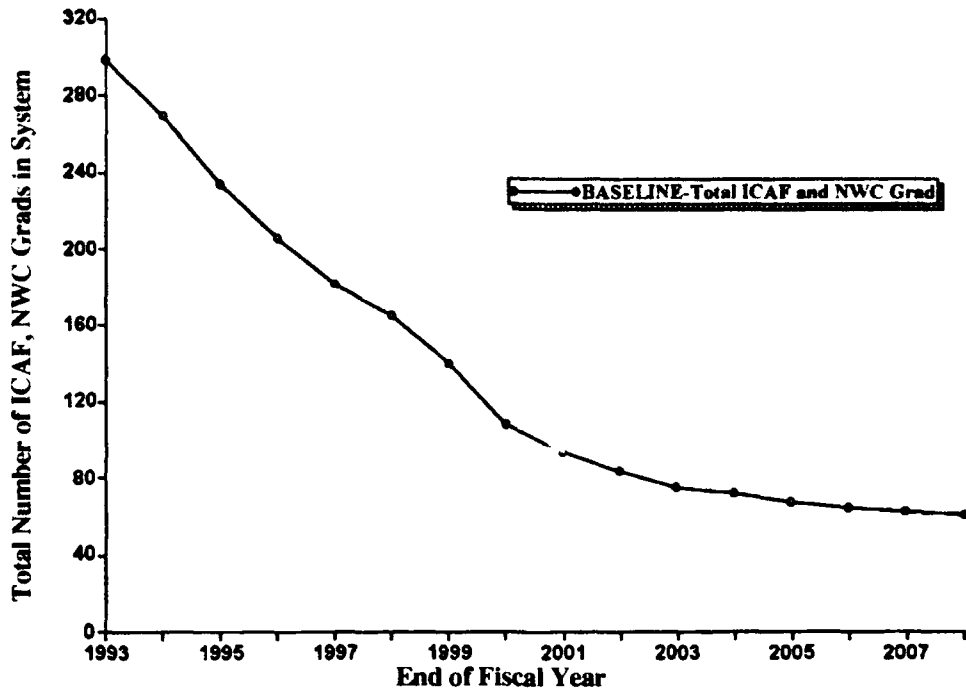
Note. ICAF — Industrial College of the Armed Forces, NWC — National War College.

Figure B-2. Single variable, single scenario, one variable graph.
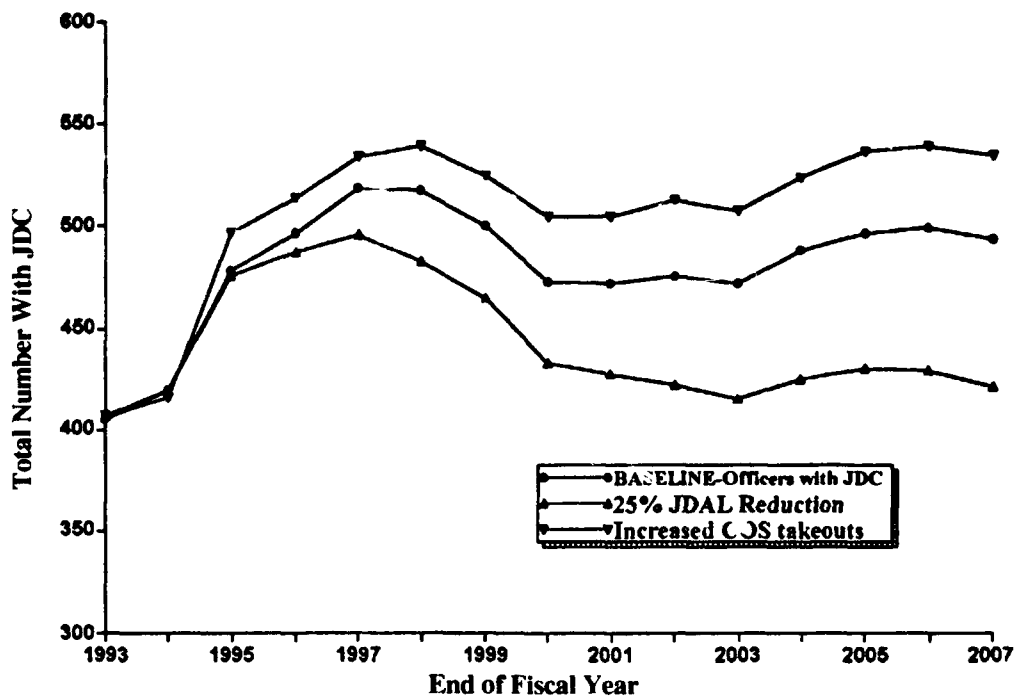
Note. JDC — Joint Duty Credit, JDAL — Joint Duty Assignment List, COS — Critical Occupation Specialist.

Figure B-3. Single variable, multiple scenario graph.
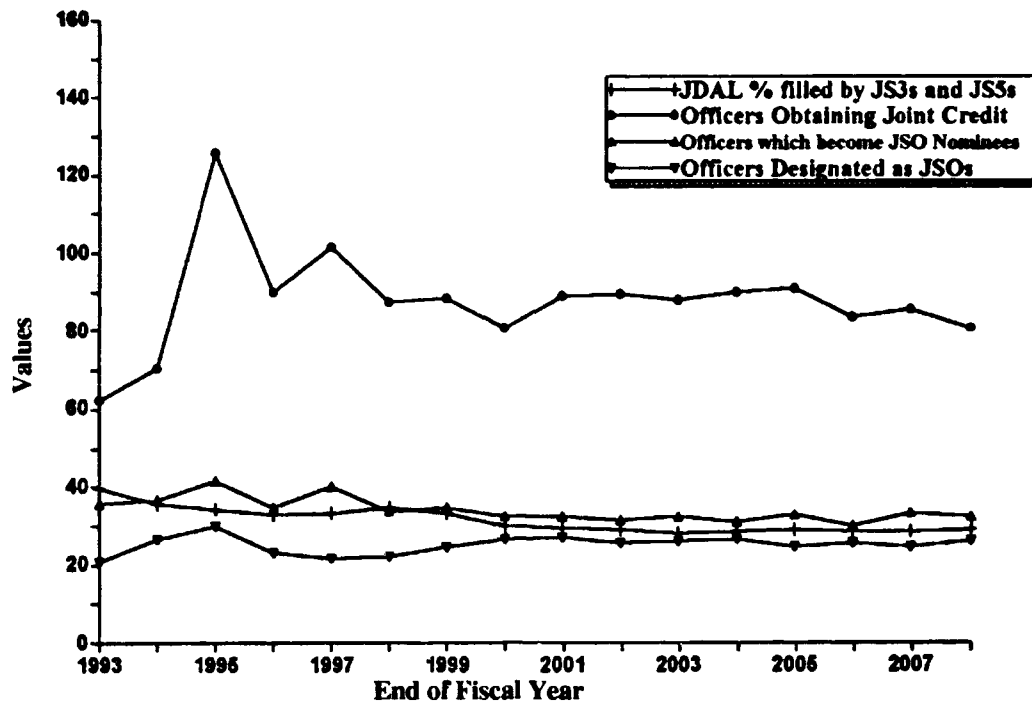
Note. JDAL = Joint Duty Assignment List, JSO = Joint Specialty Officer.

Figure B-4. Multiple variable, single scenario graph.
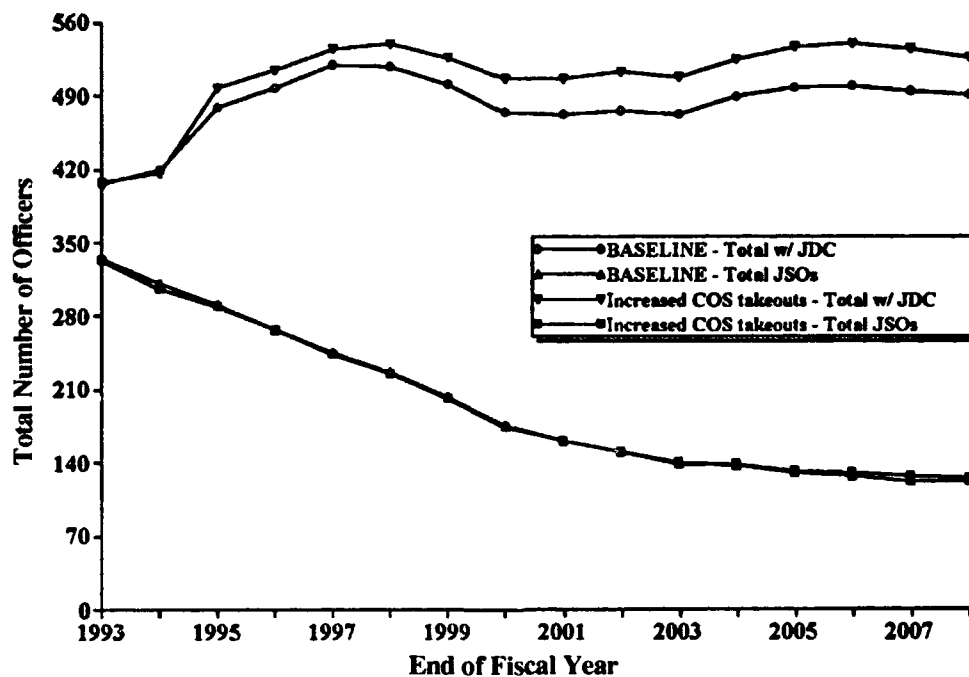
Note. JDC = Joint Duty Credit, JSOs = Joint Speciality Officers, COS = Critical Occupation Specialist.

Figure B-5. Multiple variable, multiple scenario graph.
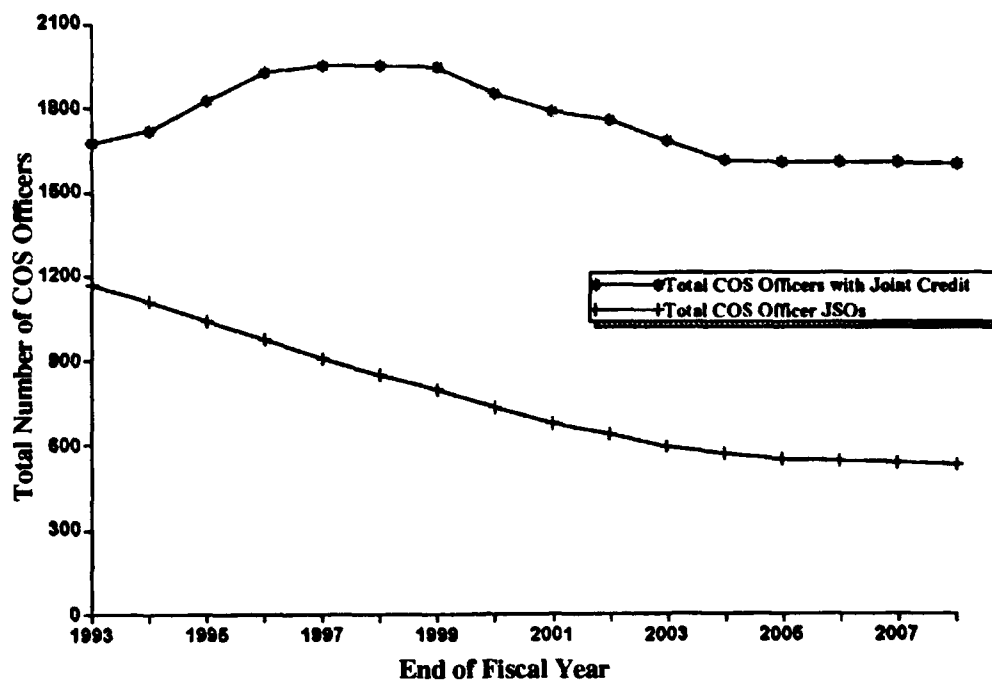
Note. COS – Critical Occupation Specialist, JSOs – Joint Specialty Officers.

Figure B-6. Multiple community, multiple variable graph.

Description: BASELINE RUN FOR PERS-455

Community: 131x

Community Size: 3762

Parameter Set: default

Entity Data: Quarter 1 FY 1993

Simulation Projected to end of FY 2008

Number of Replications: 30

GLOBAL PARAMETER SETTINGS

PRIORITIZING BILLET ASSIGNMENT PARAMETERS:

Sea Command:	1
Shore Command:	2
Sea Duty:	3
Non-concurrent Phase II:	4
Critical JDAL:	5
JS3/JS5 JDAL:	6
NWC:	7
ICAF:	8
Senior Phase I:	9
Inter. Phase I:	10
Req. Fill Shore Duty:	11
'Anyone' JDAL:	12
Other Shore Duty:	13

MISCELLANEOUS GLOBAL PARAMETERS:

|		
Max percent of Phase II seats to be direct entries:	0	
Strategy for Phase II assignment: direct entries last resort		
Percent of Non-concurrent Phase II seats:	80	
Phase II school duration (months):	3	
Target percent fill of JDAL by JS3, JS5 (COS):		28
Target percent fill of JDAL by JS3, JS5 (Non-COS):		50
Strategies for fill of Noncritical JDAL:		
For JS3/JS5 JDAL: random selection		
For 'Anyone' JDAL: random selection		
Max number of JDAL tours prior to Flag promotion:		3
Percent of JSO eligible to be selected as JSO:	80	

Note. PERS-455 – Chief of Naval Personnel (Code 455), JDAL – Joint Duty Assignment List, NWC – National War College, ICAF – Industrial College of the Armed Forces, COS – Critical Occupation Specialist, JSO – Joint Specialty Officer.

Figure B-7. Joint Specialty Officer Modeling System (JSOMS) results.

COMMUNITY-SPECIFIC PARAMETER SETTINGS:

SEA BILLET PLACEMENT:

Percent O-4 back-to-back Sea: 85

Percent O-5 back-to-back Sea: 50

Percent O-6 Back-to-Back Sea: 15

Percent COS Takeouts to Sea: 70

COS TAKEOUTS:

Quarter 1: 3

Quarter 2: 5

Quarter 3: 10

Quarter 4: 12

Selection Strategy: Random

AVAILABLE SCHOOL SEATS:

	Qtr1	Qtr2	Qtr3	Qtr4
Senior Phase I	12	5	0	31
Int. Phase I	9	8	0	54
Phase II	6	13	13	7
NWC	0	0	0	5
ICAF	0	0	0	5

TARGET NUMBER OF JDAL BILLETS:

FY 1993

Paygrade	Billet Type	Target JDAL Size
O-5	Critical	14
O-6	Critical	20
O-4	Noncritical	69
O-5	Noncritical	133
O-6	Noncritical	79

FY 1994

Paygrade	Billet Type	Target JDAL Size
O-5	Critical	14
O-6	Critical	20
O-4	Noncritical	69
O-5	Noncritical	133
O-6	Noncritical	79

Note. COS – Critical Occupation Specialist, NWC – National War College. ICAF – Industrial College of the Armed Forces, JDAL – Joint Duty Assignment List.

Figure B-7. (Continued).

END OF YEAR RESULTS

FY	%JDAL JS3/JSS	Total JS1s	Total JS2s	Total JSSs				Total JS7s	Total JS8s	Total with JS7 & JS8	JDAL Billets in use			JS2add curfy	JS3add curfy	JS5add curfy	# Waiv	COS to curyr	%O-6 w/JDC	#O-6 > 24 yrs	#prof JSOs	#MC w/ JDC
				O-4	O-5	O-6	Total				O-4	O-5	O-6									
1993	40	298	406		123	195	329	485	115	106	72	148	92	63	36	20	0	28	44	363	15	25
1994	38	255	415	4	110	179	295	557	147	139	83	139	96	69	36	27	0	27	44	364	23	22
1995	37	224	471	5	90	186	283	596	168	160	72	125	92	118	34	28	0	28	46	339	40	24
1996	35	199	487	8	80	175	266	643	189	182	76	114	85	74	31	22	0	28	50	332	43	35
1997	35	176	485	5	63	157	230	666	198	192	85	115	80	89	37	16	0	30	55	255	52	41
1998	35	163	475	4	56	149	215	694	205	199	77	114	85	76	30	22	0	30	55	248	60	51
1999	36	137	444	4	43	137	189	709	211	206	78	114	80	76	34	27	0	30	53	245	56	57
2000	34	103	438	1	39	121	166	737	210	205	66	115	80	80	35	25	0	27	54	241	48	58
2001	33	82	416	2	33	112	152	762	214	210	71	114	82	64	31	24	0	28	52	254	40	64
2002	29	70	425	4	30	100	140	762	205	201	77	114	82	85	28	26	0	27	52	240	44	61
2003	31	64	414	2	29	96	133	761	196	192	75	114	80	71	29	25	0	29	48	245	34	54
2004	30	62	426	1	33	92	134	768	201	193	79	115	80	72	30	28	0	29	46	242	39	53
2005	30	60	432	1	30	92	133	773	200	185	76	114	80	72	28	20	0	30	46	240	42	52
2006	30	59	454	2	35	86	133	780	200	181	73	114	80	80	33	26	0	30	44	237	46	48
2007	31	56	447	1	33	77	117	774	188	174	74	114	80	75	28	21	0	29	42	237	39	42
2008	31	56	426	0	37	80	121	781	198	182	79	114	85	62	30	27	0	30	46	242	39	44

END REPLICATION 1

Note. JDAL – Joint Duty Assignment List, curfy – Current Fiscal Year, Waiv – Waiver, curyr – Current Year, prof – professional, JSO – Joint Specialty Officer, MC – Major Command.

Figure B-7. (Continued).

B-7

END OF YEAR RESULTS

FY	%JDAL JS3/JS5	Total JS1s	Total JS2s	Total JS5s				Total JS7s	Total JS8s	Total with JS7 & JS8	JDAL Billets in use			JS2 add'l curfy	JS3 add'l curfy	JS5 add'l curfy	# Waiv	COS to curryr	%O-6 w/JDC	#O-6 >24 yrs	#prof JSOs	#MC w/ JDC
				O-4	O-5	O-6	Total				O-4	O-5	O-6									
1993	40	302	408	7	123	202	336	487	119	111	74	147	99	58	35	22	0	25	45	363	17	25
1994	36	272	422	7	111	185	308	540	145	137	86	136	99	71	35	26	0	30	44	365	27	24
1995	31	237	475	5	104	179	293	587	166	158	83	129	85	124	34	28	0	30	46	335	39	31
1996	32	212	490	7	89	171	272	633	183	176	74	120	81	87	32	23	0	29	49	328	35	32
1997	36	192	494	4	76	161	246	666	198	192	83	114	79	84	41	21	0	29	52	252	44	39
1998	41	176	501	4	62	162	232	700	206	201	82	118	78	80	33	22	0	30	54	254	45	48
1999	39	148	478	2	49	146	200	731	217	212	78	114	80	70	32	19	0	30	55	266	43	58
2000	33	114	446	2	29	135	171	751	222	217	77	114	89	71	30	24	0	28	50	263	41	54
2001	31	97	432	2	29	112	151	763	221	216	76	117	81	78	29	23	0	28	48	261	43	49
2002	30	84	422	1	30	101	140	749	207	203	72	114	81	77	28	28	0	30	50	260	38	47
2003	29	74	416	0	27	104	139	747	199	193	71	117	81	73	26	28	0	29	49	264	38	51
2004	29	71	432	1	26	108	139	763	212	200	74	114	81	77	34	27	0	30	49	255	41	53
2005	29	71	443	2	28	109	143	766	219	208	70	115	81	77	23	25	0	29	52	247	40	56
2006	29	62	449	1	30	106	138	769	218	202	71	118	81	77	32	22	0	30	51	245	42	55
2007	29	65	440	1	27	104	135	778	208	193	71	114	82	62	29	23	0	29	51	247	40	57
2008	30	66	433	3	22	97	128	770	202	190	70	114	82	73	32	22	0	28	49	253	44	51

END REPLICATION 2

Note: JDAL = Joint Duty Assignment List, curfy = Current Fiscal Year, curryr = Current Year, prof = professional, JSO = Joint Specialty Officer, MC = Major Command.

Figure B-7. (Continued).

B-8

END ALL REPLICATIONS

FY 1993 STATISTICS

PROJECTION YEAR STATISTICS

	% JDAL JS3/JS5	Total JS1s	Total JS2s	Total JS5s				Total JS7s	Total JS8s	Total with JS7 & JS8	JDAL Billets in use			JS2 add curfy	JS3 add curfy	JS5 add curfy	# Waiv	COS to curyr	%O-6 w/JDC	#O-6 >24 yrs	#prof JSOs	#MC w/ JDC
				O-4	O-5	O-6	Total				O-4	O-5	O-6									
Mean:	39.6	298.9	404.0	8.9	126.6	194.9	334.7	494.3	119.1	110.0	74.9	148.9	97.4	62.2	36.4	20.8	0.0	27.3	43.6	361.7	15.9	24.9
Minimum:	37.0	291.0	395.0	6.0	120.0	190.0	323.0	485.0	113.0	103.0	69.0	147.0	92.0	58.0	31.0	18.0	0.0	21.0	41.0	354.0	13.0	22.0
Maximum:	42.0	306.0	413.0	11.0	134.0	205.0	347.0	506.0	124.0	117.0	81.0	156.0	100.0	66.0	42.0	22.0	0.0	30.0	45.0	367.0	19.0	28.0
Variance:	1.4	21.6	24.7	1.8	13.2	19.2	32.7	25.3	7.5	9.3	10.1	7.5	5.1	5.7	8.6	1.2	0.0	3.5	1.2	10.2	2.2	2.2
Standard Deviation:	1.2	4.6	5.0	1.3	3.6	4.4	5.7	5.0	2.7	3.1	3.2	2.7	2.3	2.4	2.9	1.1	0.0	1.9	1.1	3.2	1.5	1.5

Note: JDAL = Joint Duty Assignment List, curfy = Current Fiscal Year, Waiv = waiver, curyr = Current Year, prof = professional, JSO = Joint Specialty Officer, MC = Major Command.

Figure B-7. (Continued).

B-9

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